

## **RECOMMENDATIONS FOR PRESERVATION AND RESTORATION**

### **Regulatory Use of the Project Data**

This project has compiled a significant amount of information on wetlands and riparian areas within the Gallatin Valley. While the scope of the project and the methods used did not allow for detailed analysis of these areas, it is hoped that the information will provide a solid starting point for more in-depth analysis. The information should be useful for regulatory management of these resources. The use of GIS software to compile the spatial data allows for easy editing in the future and the addition of more detailed data in the associated data tables as needed.

The information is intended to aid regulatory agencies and landuse planners with preservation and restoration of these important habitats. The results of the project have been or will be presented to the Gallatin County Planning Board, the Gallatin County Planning Department, Gallatin County Open Lands Board, City of Bozeman Planning Review Board, and Gallatin Conservation District Board. Both the Gallatin County and City of Bozeman GIS departments have been provided with the CIR Imagery and the GIS databases compiled for the project.

The intent is for interested agencies to use the project information to gain a better understanding of the current status and spatial distribution of wetlands and riparian areas. The GIS layers can be used during the review of proposed projects to see if wetland or riparian resources may be impacted. In these cases, the project data can act as a trigger for requiring a site-specific analysis.

Proposed changes to Gallatin County floodplain regulations include limitations on the clearing of riparian vegetation. The riparian/wetlands mixed layer along with the CIR basemap provide a good reference for documenting current conditions and reviewing proposed projects. The riparian/wetland mixed GIS layer and the CIR imagery can be used to document the location of woody riparian vegetation as of September 2001. Any clearing of woody riparian vegetation after September 2001 could be documented with future aerial photographs or field inspections.

### **Future Resource Analysis of Wetlands and Riparian Areas**

This project provides a good baseline for the spatial distribution of wetland and riparian features in 2001 and can be used to compare with a future assessment of the spatial distribution of these features. An analysis of the land areas occupied by wetlands completed 20 years from now, along with the results of this project would show how much change has occurred and where it has occurred.

### **Functional Assessment of Wetlands**

The project provides a good starting point for more detailed assessments of wetlands in the Gallatin Valley. The information compiled for this project could be used to direct efforts to complete functional assessments of wetlands and riparian areas in the Gallatin Valley. Possibilities include use by the Army Corp of Engineers to develop a Special Area Management Plan (SAMP). This type of work is currently being conducted in Yellowstone

National Park. The Gallatin Local Water Quality District is currently considering working with the Montana Department of Environmental Quality (Randy Apfelbeck) and the Montana Natural Heritage Program to complete more detailed assessments of wetlands identified by this project. The methods used for this project and the results, may have value for developing procedures for mapping and monitoring wetlands statewide.

### **Wetland Protection and Restoration**

The GIS data layers for *wetlands* and *riparian/wetlands mixed* provide a good reference for identifying wetland areas in the Gallatin Valley for preservation. Analysis of the project data shows that the northwestern portion of the valley contains a significant concentration of both wetland and riparian features. This area is supported by regional ground water discharge, which results in shallow water tables, stable water tables, and lots of springs and creeks. This ground water discharge area and the associated wetland features appears to be a fairly continuous ecosystem that has not been developed to a significant degree due to the presence of shallow ground water. Most of the changes that have occurred in this area are due to clearing of vegetation and installation of drains. Features in this area are good candidates for preservation. A number of wetlands in this area have been drained. These areas are good potential sites for restoration since the natural hydrology would support wetlands if the drains were removed.

Wetland features north of Bozeman along the East Gallatin River, south of Bozeman along Bozeman Creek, and east of Bozeman along Rocky Creek should also be targeted for preservation. As seen on Attachment D, historically these areas likely contained much more extensive wetland and riparian features. The areas shown in light blue on Attachment D show areas with potential for restoration projects.